

WHAT IS CLAIMED IS:

1. An inrush current controller for a device, comprising:
 - a connector for hot-plugging the device into a source of energization;
 - an impedance having a current input that couples to a first contact of the connector, an impedance control input, and a current output coupling to the device; and
 - an impedance control circuit having a logic input coupling to a second contact of the connector, and having an impedance control output connected to the impedance control input, the impedance control output forcing the impedance OFF during a first time interval after hot-plugging, and the logic input enabling a limited inrush at the current input after the first time interval.
2. The inrush current controller of Claim 1 wherein the device comprises a data storage device and the source of energization comprises a host computer system.
3. The inrush current controller of Claim 1 wherein the impedance is continuously variable as a function of the control input.
4. The inrush current controller of Claim 1 wherein the impedance control circuit comprises:
 - a timer coupling to the current input and the impedance control output, and providing a timer output that forces the impedance OFF during the first time interval; and
 - an inrush current limit circuit coupled to the logic input and the impedance control output, and providing an inrush current limit output enabling the limited inrush.

5. The inrush current controller of Claim 4 wherein the timer output overrides the inrush current limit output to the impedance control output.
6. The inrush current controller of Claim 5 wherein the timer output is an open circuit after the first time interval.
7. The inrush current controller of Claim 4 wherein the inrush current limit output gradually changes the impedance control output during a turn-on interval so that a device voltage has a slew rate that does not exceed than 12 volts per 100 milliseconds.
8. The inrush current controller of Claim 7 wherein the device has an impedance that is partially inductive.
9. The inrush current controller of Claim 4 wherein the timer resets automatically when the connector is disconnected from the source of energization.
10. The inrush current controller of Claim 4 wherein the timer is triggerable by voltage transients at the current input.
11. The inrush current controller of Claim 1 wherein the logic input triggers the limited inrush when the logic input is open circuit, and when the logic input is at a high level.
12. The inrush current controller of Claim 1 wherein the impedance comprises a transistor.
13. An inrush current controller for a device, comprising:

a connector for hot-plugging the device into a source of energization, and
an impedance having a current input that couples to a first contact
of the connector, an impedance control input, and a current output
coupling to the device; and

impedance control circuit means for forcing the impedance OFF during a
first time interval after hot-plugging, and for enabling a limited
inrush at the current input after the first time interval.

14. The inrush current controller of Claim 13 wherein the impedance control
circuit means further comprises logic input means for receiving a logic input.

15. The inrush current controller of Claim 13 wherein the impedance control
circuit means further comprises impedance control output means coupling to the
impedance control input for controlling the impedance.

16. The inrush current controller of Claim 13 wherein the device comprises a data
storage device and the source of energization comprises a host computer system.

17. The inrush current controller of Claim 13 wherein the impedance control
circuit means further comprises:

timer means coupling to the current input for providing a timer output that
forces the impedance OFF during the first time interval; and
inrush current limit means for providing an inrush current limit output
enabling the limited inrush.

18. The inrush current controller of Claim 17 wherein the timer means is
triggerable by voltage transients at the current input.

19. A method of energizing a hot-pluggable device, comprising:

providing a connector for hot-plugging the device into a source of energization;

placing an impedance between a current input that couples to a first contact of the connector and a current output that couples to the hot-pluggable device;

providing an impedance control output connected to an impedance control input, the impedance control output forcing the impedance OFF during a first time interval after hot plugging; and

providing an impedance control circuit with a logic input coupling to a second contact of the connector, the logic input enabling a limited inrush at the current input after the first time interval.

20. The method of Claim 19 further comprising: controlling a continuously variable impedance between the current input and the current output.

21. The method of Claim 19 further comprising:

coupling a timer to the current input and the impedance control output;
providing a timer output that forces the impedance OFF during the first time interval;

coupling an inrush current limit circuit to the logic input and the impedance control output, and

providing an inrush current limit output enabling the limited inrush.

22. The method of Claim 21 further comprising: overriding the inrush current limit output with the timer output.

23. The method of Claim 21 further comprising: gradually changing the inrush current limit output during a turn-on interval so that a device voltage has a slew rate that does not exceed a preselected limit.

24. The method of Claim 21 further comprising: automatically resetting the timer when the connector is disconnected from the source of energization.

25. The method of Claim 21 wherein the timer is triggerable by voltage transients at the current input.